

Description of a cardiolith.

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[With Plate II, figs. 2 and 3, and Plate III.]

PRELIMINARY REMARKS.—The specimen which forms the object of this communication was kindly sent to me by Dr. Mann, who afterwards presented it to the St. George's Hospital Museum. I have abstracted from his letter the following notes.

"A. N—, a female child, 5 years of age, was admitted on the 11th of October, 1889, into the Homerton Hospital. She had been taken ill on the 7th with vomiting, and on the 9th had complained of sore throat. She has no dyspnœa. Temp. 100°—102°. Pulse 142. Urine: albumen $\frac{1}{8}$.

"13th.—Pulse 130, extremely weak and irregular in strength.

"14th.—Pulse 128, extremely weak and difficult to count. The child was seen about ten minutes before death, when she was sitting up extremely cyanosed. The pulse could be felt. Respiration rapid, but air apparently entering lungs freely. No sign of laryngeal obstruction. Child perfectly sensible. Ether injection given without any effect on pulse.

"Child lay down, gradually getting more and more cyanosed, without apparent suffering, and remaining perfectly sensible till death (October 14th, 9.32 p.m.).

"*Post-mortem examination* (October 16th, 3 p.m.).—Uvula and both tonsils covered with adherent membrane, which extended to base of tongue and round sides of pharynx to epiglottis, which it covered. Whole of inner surface of larynx covered with very adherent membrane, which extended down the upper half of the trachea. No membrane in the bronchi. Much recent pleural adhesions on both sides.

"*Left lung*: Weight 5 oz., congested, but crepitant; no hæmorrhage. *Right lung*: Weight 8 oz., extremely emphysematous, and collapsing much when cut; the whole lung contained many hæmorrhages, from the size of a pin's head to that of a large bean.

"*Heart*: Right ventricle not dilated, contained a little fluid blood and a layer of very tough clot, which adhered firmly to muscoli papillares and to the under surface of the valve, and extended into the pulmonary artery and its branches.¹ Left ventricle contracted and empty. Veins all much distended with blood.

"*Kidneys* $4\frac{1}{2}$ oz. *Liver* 20 oz., congested. *Spleen* $1\frac{1}{2}$ oz., deep, purple, firm. Peyer's patches enlarged, raised, and much congested. *Æsophagus* and stomach normal.

"*Brain*: Sinuses very full of blood."

Description of the specimen.

There remains little to add to this general description of the heart.

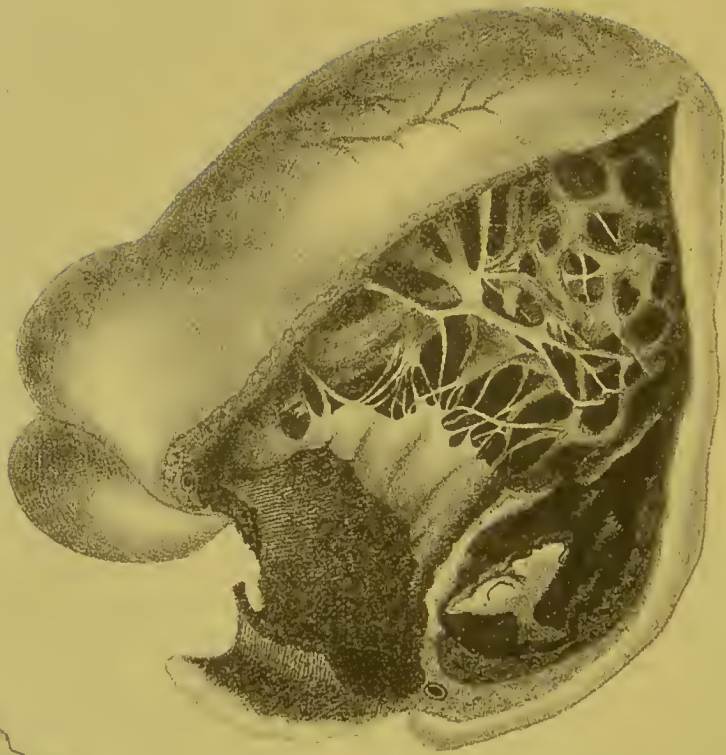
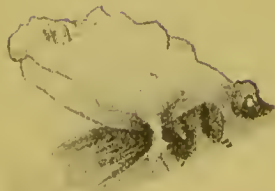
There is apparently no gross malformity, no marked disease of the walls or of the valves of the organ. However, on examining more closely the walls of the right ventricle, one is struck by the somewhat unusual thickness of the myocardium in the neighbourhood of the calculus, and by the great number of columnæ carneæ and tendinous bands, encroaching more than usual upon the ventricular cavity. There is also a marked thickening of the right segment of the tricuspid valve, which, as will be seen, covers the stone.

The concretion itself is, as has just been seen, almost entirely covered by the right segment of the tricuspid valve, and is practically separated from the greater part of the ventricular cavity by that membrane.

The stone occupies the space existing between the valve internally and the ventricular wall externally; above, it comes in contact with the point of insertion of the valve (auriculo-ventricular ring); below it extends as far as the point of attachment of the muscoli papillares to the wall of the ventricle.

The anterior part extends beyond the anterior papillary muscle, and its posterior end comes nearly in contact with some of the posterior papillary muscles.

¹ "In passing the finger into the ventricle a stone-like body was felt. The papilla, to which the stone is attached by a narrow pedicle, does not appear infiltrated, neither are the salts deposited in other parts of the heart. The stone was not covered with fibrin, although there was much very tough clot in the interstices of the ventricle."



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DESCRIPTION OF PLATE II.

Figs. 2 and 3, illustrating Dr. Delépine's paper on a Cardiolith.

FIG. 2.—This drawing is of normal size, and represents accurately the state of the parts after hardening in alcohol. The heart had been opened in a somewhat unusual fashion. This accounts for the peculiar relations of the auricular appendage. The line of incision is not parallel to the interventricular sulcus, but is made nearly along the right border of the ventricle. The cavities of the right auricle and of the right ventricle are exposed. That of the right ventricle is almost entirely occupied by a complicated network of columnæ carneæ and of chordæ tendineæ. The posterior segment of the tricuspid valve is fully exposed, and is healthy; the left segment is partly hidden; the right segment is seen in profile, and has been pulled away from the stone, which was almost entirely hidden by it. This renders evident the thickening of the valve in the region corresponding to the concretion. The concretion is seen endwise, and only one of its attachments to the cardiac wall is visible.

FIG. 3.—Drawing of the outer aspect of the cardiolith, to show the fibrous pedicle-like adhesions by which it is attached to the endocardium (slightly enlarged).

DESCRIPTION OF PLATE III.

Illustrating Dr. Delépine's Description of a Cardiolith.

From drawings by himself.

FIG. 1 represents a section through the postero-inferior, narrow, nodulated end of the calculus, as seen under a low power.

1. Layer of globular masses of carbonate of calcium.
2. Layer of transparent crystalline phosphate of calcium.
3. Central space containing fibrin, granular *débris*, and pigment.
4. Deep layer of fibro-endothelial covering, staining badly.
5. Superficial layer composed of concentric layers of endothelial cells, separated by a small amount of nearly homogeneous intercellular substance.
6. Thickened endocardium adherent to the concretions.
7. Endocardium thickened at a place where the concretion was pressing against it.
8. Myocardium.
9. Small opening simulating a blood-vessel; but it is the only one of the kind which can be found, and is probably nothing more than a small channel remaining between the endothelial layers.
10. A split occurring between the endothelial layers.

FIG. 2.—A small portion of the endothelial covering where it is thinnest. ($\times 1100$.)

1. Superficial endothelial layers. The structure is the same as that of a lamellar fibroma.
2. Deeper layers of the endothelial covering. The line points to a large mass staining badly, probably composed of swollen degenerated cells.
3. Deepest layers of the covering, becoming infiltrated with carbonate of calcium.
4. Peculiar fibrillation of the intercellular substance.
5. Globular coalescent masses of carbonate of calcium.

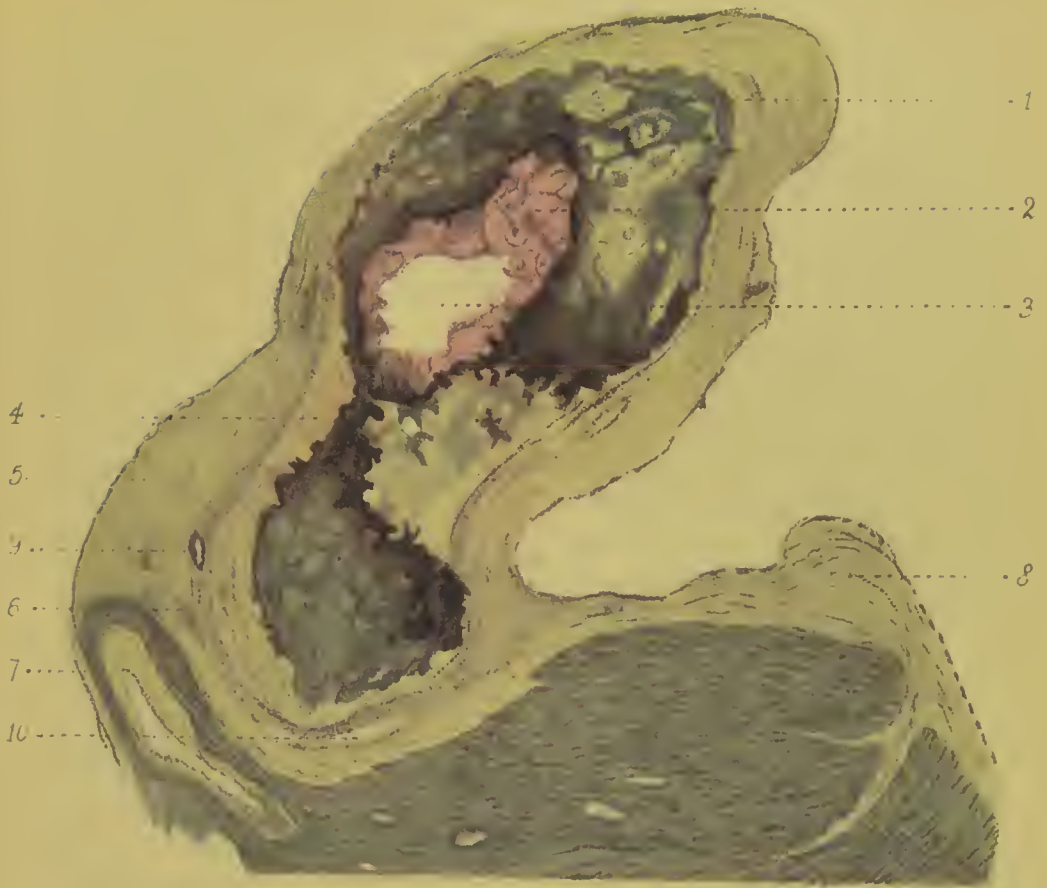


Fig 1

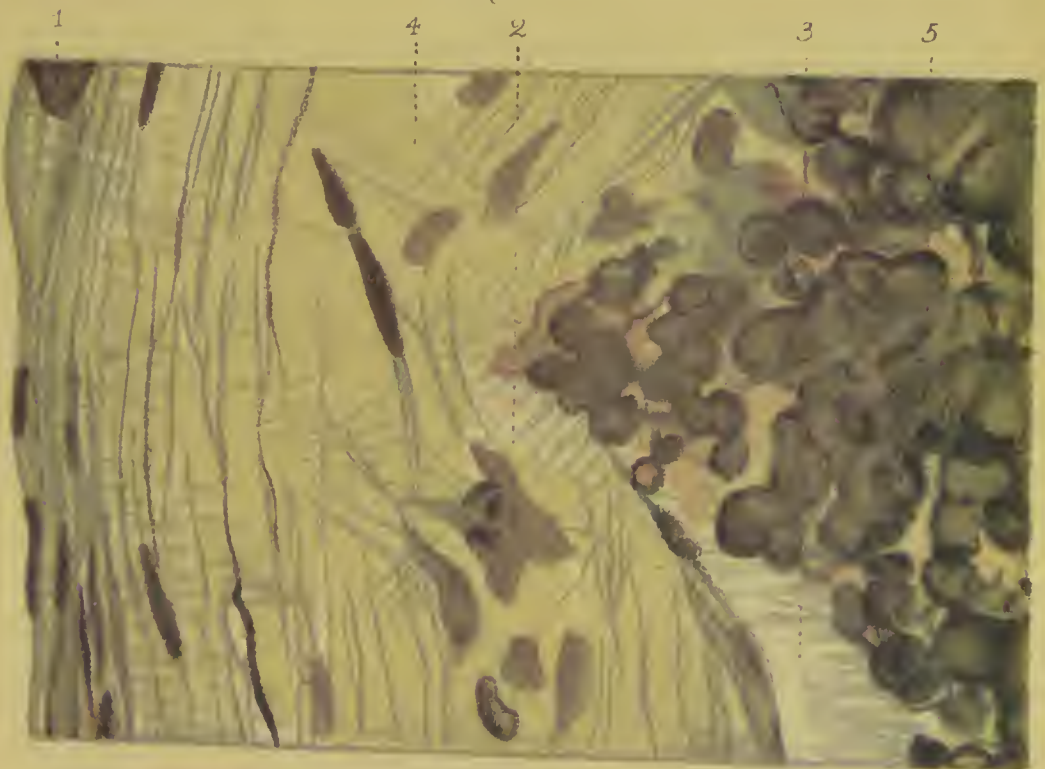


Fig 2

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Danielsson & Co chromo.

